

# WOKINGHAM

# METEOROLOGICAL

# DATA

## Wokingham Climatological Station, Emmbrook, Berkshire.

Lat/Long 51°25'N 00°51'W NGR (SU)798701 Altitude 46m ASL.

### Monthly Means and Totals

### OCTOBER 2017

Temperature (°C)		Anomaly		Rank in the past 136 years					
Mean maximum	16.5	+1.3		14 <sup>th</sup> highest					
Mean minimum	9.5	+2.3		7 <sup>th</sup> highest					
Daily mean	13.0	+1.8		10 <sup>th</sup> highest					
Highest maximum	21.4	on 16 <sup>th</sup>	Lowest maximum	11.3	on 30 <sup>th</sup>				
Highest minimum	15.0	on 14 <sup>th</sup>	Lowest minimum	-0.7	on 30 <sup>th</sup>				
Mean grass minimum	6.6	+2.5	Lowest grass minimum	-4.6	on 30 <sup>th</sup>				
Mean earth @30 cm	14.6	+1.5	Earth @100 cm	15.3					
Frost duration (hrs)	3.2		Rain duration (hrs)	17.2					
Rainfall total (mm)	17.2	24 %		9 <sup>th</sup> lowest					
Highest daily fall	8.2	on 19 <sup>th</sup>							
Number of: Dry days (<0.2mm)	19	Wet days (>0.9mm)	4	days ≥5mm	1				
Sunshine total (hrs)	98.5	Daily mean	3.18	89 %	Sunniest day	9.2 on 27 <sup>th</sup>			
N° days with: Air frost	1	Ground frost	2	Snow falling	0	Snow lying	0		
Thunder	0	Hail ≥5mm	0	Small hail/ice	0	Fog @09	0	Nil sun	5
Pressure MSL: Mean @09 GMT, mbar	1018.9	+4.6	Highest	1035.5	on 27 <sup>th</sup>	Lowest	996.5	on 20 <sup>th</sup>	
Relative humidity: Mean (%)	83.2	Lowest	42	on 3 <sup>rd</sup>	Water vapour (g/kg), mean at 09 and 15 GMT	7.9,	7.7		
Overall mean wind speed (mph)	7.4	Windiest day	14.2	on 21 <sup>st</sup>	Max gust	41	on 21 <sup>st</sup>		
Wind direction (days)	N 0	NE 1	E 0	SE 0	S 4	SW 17	W 7	NW 2	
Least windy day (mph)	2.0	on 30 <sup>th</sup>	Calm; less than 0.5 mph (minutes)	548					

Anomaly = departure from 1981 to 2010 average (degrees C, percent and mbar).

Notes:

### Very Mild and Very Dry with Sunshine Well Below Average.

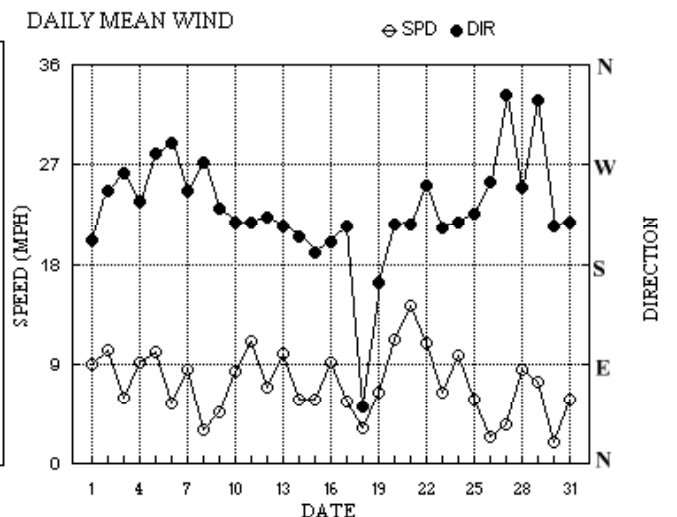
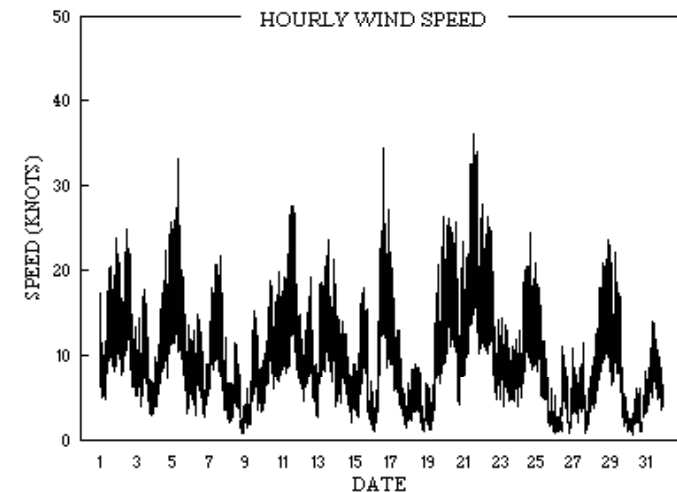
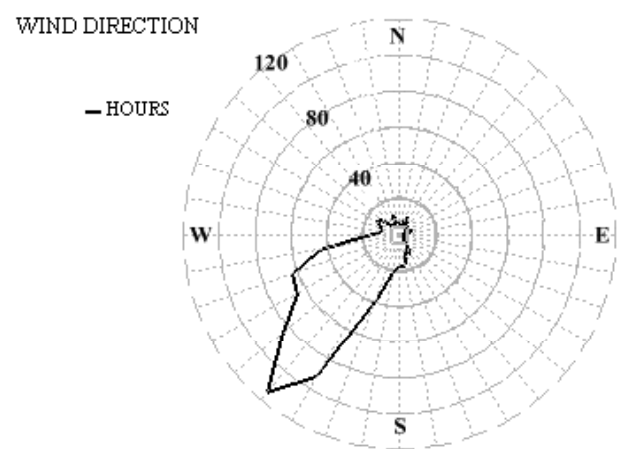
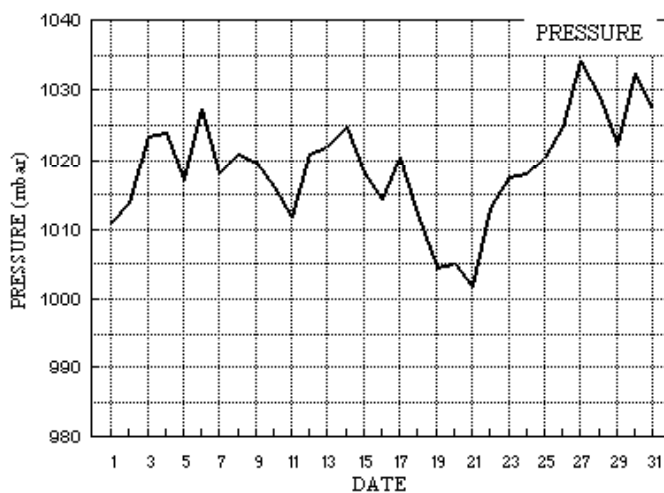
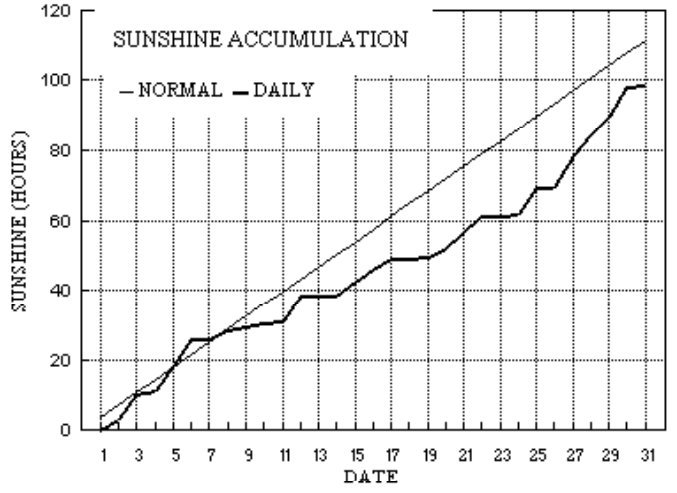
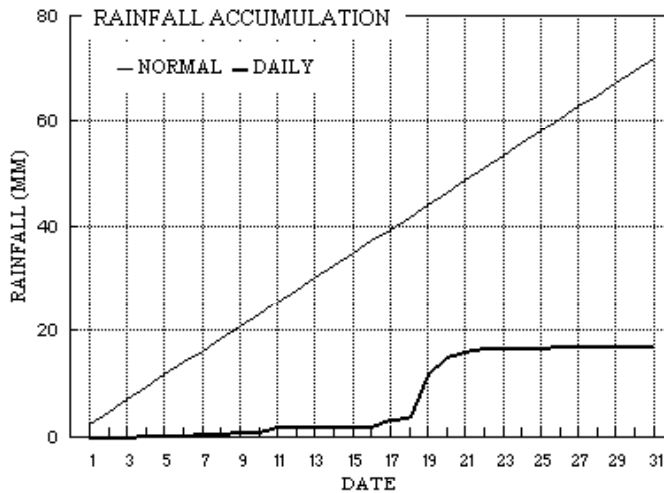
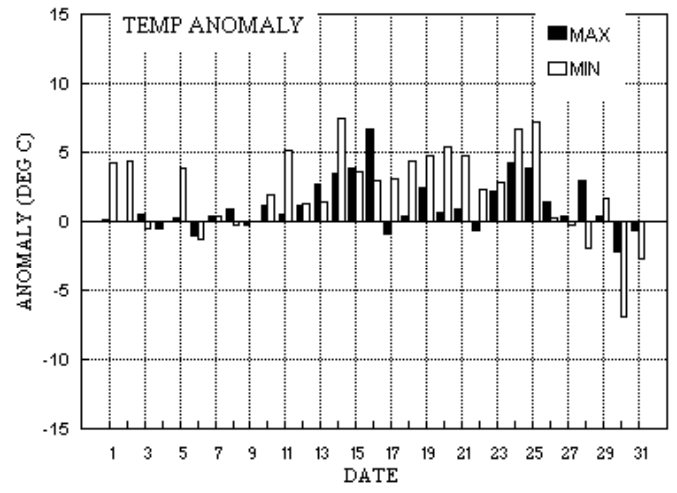
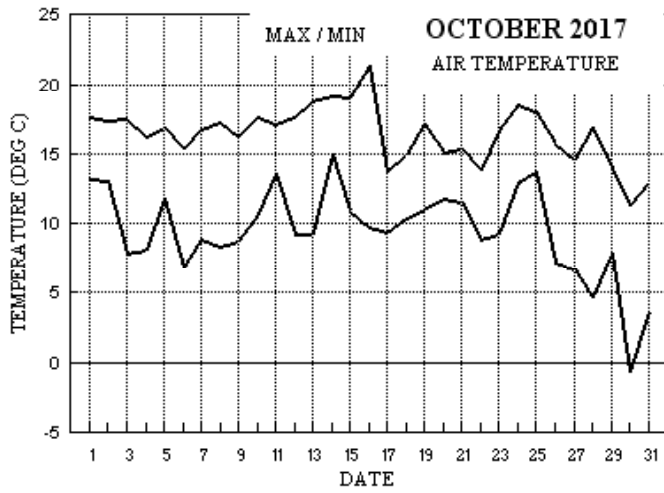
**Temperature:** In terms of the mean temperature, this October is well within the mildest 10% since before 1882. However, several recent years have been milder, namely 2014, 2011, 2006, 2005 and 2001. As a further indicator of our changing climate, the mean temperature for the 17 Octobers before 2000 has been compared with the 17 since, and this shows a 0.9° increase. While this month's mean minimum ranks 7<sup>th</sup> highest in 136 years, 5 of the 6 higher values have occurred in the current millennium. The month's highest max is 1.2° above the median and the lowest max is 1.9° above its median. The highest min is 2.3° above the median and the lowest min is 0.3° above its median. The mean grass min, while 2.5° above average, is highest only since 2014, and the lowest grass min is exactly average. Earth temperatures at both 30 cm and 1 m depth are well above average, though not quite a record. The first air frost of the season was on the 30<sup>th</sup>, after 185 frost free days. Daily max and min were near or above average throughout, apart from the 30<sup>th</sup>. Anomalies for daily max were over +3° from the 14<sup>th</sup> to 16<sup>th</sup>, and on the 24<sup>th</sup>, 25<sup>th</sup> and 28<sup>th</sup>, and became -2° on the 30<sup>th</sup>. For daily min anomalies were over +5° on the 11<sup>th</sup>, 14<sup>th</sup>, 20<sup>th</sup>, 24<sup>th</sup> and 28<sup>th</sup>, but were -7° on the 30<sup>th</sup>. **Rainfall:** This has been a very dry October, a month that is on average the wettest in the year. This October is driest since 1978, which is the driest on record when only 3.4 mm fell, but in recent years last October was also dry, but with 10.5 mm more than this month. The total on the month's wettest day is 8 mm below the median and lowest since 2011, the only other October this millennium with no daily fall of 10 mm or more. Rainfall duration is lowest since before 1993. Although the number of dry days is 3 above average, the number of days with 1 mm or more is 7 below average. There was only 3.6 mm of rain before the 19<sup>th</sup>, but the majority of the month's rain fell on just 2 days, the 19<sup>th</sup> and 20<sup>th</sup>, the 11.6 mm over 2 days being 67 % of the month's total, the final 11 days producing only another 2.0 mm. A dry spell of 5 days ending on the 16<sup>th</sup>. The highest rainfall rate was 56 mm/hr on the 19<sup>th</sup> at 2140 GMT. Thunder and hail were absent this month. **Sunshine:** This has been quite a dull October overall, with the total 11 % below average. However, it is duller only since 2015, and 6 of the past 17 Octobers have also been duller than this month. There were a few sunny days scattered through the month, the 3<sup>rd</sup>, 5<sup>th</sup>, 6<sup>th</sup>, 12<sup>th</sup>, 25<sup>th</sup>, 27<sup>th</sup>, 28<sup>th</sup> and 30<sup>th</sup> all having 60 % of the maximum, and the period 27<sup>th</sup> to 30<sup>th</sup> was the sunniest. However, apart from the 12<sup>th</sup>, the period 7<sup>th</sup> to the 24<sup>th</sup> was poor, with 10 days having <10 % of the max. Overall there were 16 days with <3 hours, 8 with =>6 hours and 1 with =>9 hours. **Wind:** It has been a windy October with the mean speed 1.2 mph above average, highest since 2013 and before that 1998. Daily mean directions were mainly SW'ly, but W'ly from the 2<sup>nd</sup> to the 8<sup>th</sup>, NE'ly on the 18<sup>th</sup>, veering SW again by the 20<sup>th</sup>, and NW'ly on the 27<sup>th</sup> and 29<sup>th</sup>. Speeds were moderate or fresh to the 5<sup>th</sup> and from the 10<sup>th</sup> to 13<sup>th</sup>, 15<sup>th</sup> to 17<sup>th</sup> and 19<sup>th</sup> to 22<sup>nd</sup>, temporarily strong on the 21<sup>st</sup>, otherwise light or moderate.

Table 1. Mean anomalies (max, min, rain, sun) for specified periods.

From the 1 <sup>st</sup> to the 10 <sup>th</sup>				From the 11 <sup>th</sup> to the 20 <sup>th</sup>				From the 21 <sup>st</sup> to the 31 <sup>st</sup>			
+0.2°	+1.3°	4%	85%	+2.1°	+3.9°	60%	60%	+1.2°	+1.3°	9%	118%

B J Burton FRMetS. Hon. Met. Officer to Wokingham Town Council.

# Wokingham climatological graphs for October 2017



Month: OCTOBER 2017

Date	Max C	Min C	Rain mm	Grass Min	30cm C	100cm C	Sun hrs	Frost hrs	pp09 mbar	Af Gf	Sf Sl	Th Ha	Ic Fg	Vec mean ddd ff sp	Max gust ddd gg HHhh	High hr ddd ff HH	Rain hrs	
1	17.7	13.2	tr	12.9	16.3	16.0	0.0	0.0	1011.1	0 0 0 0	0 0 0 0	0 0 0 0	202	7.5 7.9	248 24 2216	236 10	22 0.0	
2	17.4	13.1	tr	10.9	16.4	16.0	3.1	0.0	1013.7	0 0 0 0	0 0 0 0	0 0 0 0	246	8.8 8.9	262 25 1140	248 12	13 0.0	
3	17.5	7.9	0.0	4.1	16.0	16.0	7.0	0.0	1023.4	0 0 0 0	0 0 0 0	0 0 0 0	262	4.8 5.2	261 18 1139	306 9	10 0.0	
4	16.2	8.1	0.3	5.0	15.4	16.0	1.1	0.0	1023.9	0 0 0 0	0 0 0 0	0 0 0 0	236	7.9 8.0	228 26 2207	231 12	22 0.1	
5	16.9	11.8	0.0	10.9	15.2	15.9	7.3	0.0	1017.1	0 0 0 0	0 0 0 0	0 0 0 0	279	7.0 8.8	316 33 0721	242 13	04 0.0	
6	15.3	6.8	0.1	2.9	14.8	15.8	7.2	0.0	1027.3	0 0 0 0	0 0 0 0	0 0 0 0	289	3.4 4.8	348 15 0919	357 7	09 0.2	
7	16.7	8.8	0.2	5.0	14.4	15.7	0.0	0.0	1018.2	0 0 0 0	0 0 0 0	0 0 0 0	246	6.8 7.5	300 22 1654	231 11	08 0.5	
8	17.2	8.3	0.0	4.0	14.6	15.6	2.8	0.0	1020.8	0 0 0 0	0 0 0 0	0 0 0 0	272	2.1 2.7	321 12 0939	311 5	11 0.0	
9	16.3	8.7	0.2	4.9	14.6	15.5	1.0	0.0	1019.6	0 0 0 0	0 0 0 0	0 0 0 0	231	3.8 4.1	269 15 1246	259 7	14 0.4	
10	17.7	10.6	0.2	7.5	14.7	15.4	0.9	0.0	1016.1	0 0 0 0	0 0 0 0	0 0 0 0	217	7.2 7.3	206 20 1916	228 10	09 0.4	
11	17.1	13.6	1.1	12.8	15.0	15.3	0.5	0.0	1011.7	0 0 0 0	0 0 0 0	0 0 0 0	217	9.5 9.7	222 28 1452	212 13	13 1.1	
12	17.6	9.2	0.0	5.0	14.8	15.3	7.6	0.0	1021.0	0 0 0 0	0 0 0 0	0 0 0 0	222	6.0 6.1	215 19 1339	232 9	14 0.0	
13	18.8	9.2	0.0	4.9	14.7	15.3	0.1	0.0	1022.0	0 0 0 0	0 0 0 0	0 0 0 0	215	8.5 8.6	225 24 1349	227 11	12 0.0	
14	19.2	15.0	0.0	11.0	15.1	15.2	0.1	0.0	1024.7	0 0 0 0	0 0 0 0	0 0 0 0	205	4.7 5.1	206 15 0209	215 8	08 0.0	
15	19.0	10.9	0.0	6.5	15.4	15.2	3.7	0.0	1018.2	0 0 0 0	0 0 0 0	0 0 0 0	190	4.6 5.1	205 18 1202	211 10	11 0.0	
16	21.4	9.8	tr	7.3	15.1	15.3	3.5	0.0	1014.4	0 0 0 0	0 0 0 0	0 0 0 0	200	7.3 8.0	211 35 1411	204 13	13 0.0	
17	13.7	9.4	1.2	6.3	14.8	15.3	3.4	0.0	1020.5	0 0 0 0	0 0 0 0	0 0 0 0	214	4.2 4.9	223 20 0217	221 10	02 2.8	
18	15.0	10.4	0.3	9.9	14.4	15.3	0.0	0.0	1012.3	0 0 0 0	0 0 0 0	0 0 0 0	51	2.1 2.8	56 9 0707	62 4	13 0.8	
19	17.1	11.0	8.2	9.0	14.6	15.2	0.1	0.0	1004.7	0 0 0 0	0 0 0 0	0 0 0 0	164	4.7 5.6	164 27 2129	162 11	20 4.6	
20	15.1	11.8	3.4	10.4	14.7	15.1	2.7	0.0	1005.0	0 0 0 0	0 0 0 0	0 0 0 0	216	8.6 9.7	229 26 0444	221 14	04 2.1	
21	15.3	11.5	0.9	9.5	14.6	15.1	4.5	0.0	1001.9	0 0 0 0	0 0 0 0	0 0 0 0	216	12.0 12.3	218 36 1307	221 16	15 0.7	
22	13.8	8.8	0.5	6.3	14.3	15.1	4.7	0.0	1013.0	0 0 0 0	0 0 0 0	0 0 0 0	251	9.3 9.4	261 28 0221	254 13	09 1.4	
23	16.6	9.2	0.1	6.2	13.9	15.0	0.0	0.0	1017.5	0 0 0 0	0 0 0 0	0 0 0 0	212	5.5 5.6	234 15 0320	230 7	02 0.3	
24	18.5	13.0	0.1	12.0	14.1	14.9	0.3	0.0	1018.0	0 0 0 0	0 0 0 0	0 0 0 0	217	8.4 8.5	213 25 1641	216 12	16 0.2	
25	18.0	13.7	0.1	10.3	14.5	14.9	7.7	0.0	1020.4	0 0 0 0	0 0 0 0	0 0 0 0	226	4.6 5.0	223 19 0152	218 10	04 0.9	
26	15.7	7.2	0.2	3.3	14.3	14.8	0.0	0.0	1024.7	0 0 0 0	0 0 0 0	0 0 0 0	254	1.5 2.2	239 11 1131	234 6	11 0.6	
27	14.6	6.7	0.0	2.0	14.4	14.8	9.2	0.0	1034.3	0 0 0 0	0 0 0 0	0 0 0 0	333	1.9 3.1	1 12 1351	346 5	00 0.0	
28	16.9	4.7	0.1	0.1	13.5	14.8	6.0	0.0	1029.0	0 0 0 0	0 0 0 0	0 0 0 0	250	7.3 7.4	261 24 2259	255 11	17 0.1	
29	13.9	7.9	0.0	10.2	13.4	14.7	5.1	0.0	1022.1	0 0 0 0	0 0 0 0	0 0 0 0	328	4.5 6.5	251 23 0204	255 11	02 0.0	
30	11.3	-0.7	tr	-4.6	12.8	14.6	8.7	3.2	1032.5	1 1 0 0	0 0 0 0	0 0 0 0	215	1.2 1.7	210 8 2334	203 4	23 0.0	
31	13.0	3.7	0.0	-1.1	12.0	14.5	0.2	0.0	1027.3	0 1 0 0	0 0 0 0	0 0 0 0	218	5.0 5.0	220 14 1052	228 7	13 0.0	
Total			17.2				98.5	3.2										17.2
Mean	16.5	9.5		6.6	14.6	15.3	3.18	0.1	1018.9					228	5 6.4			
Anom	+1.3	+2.3	24%	+2.5	+1.5	+0.6	89%			+4.6								
Daily mean		13.0																
Anom		+1.8																

Number of days with:

Air frost = 1      Ground frost = 2      Nil sun = 5  
 Snow falling = 0      Snow lying = 0      Thunder = 0  
 Hail=>5mm = 0      Hail<5mm or ice = 0      Fog at 09GMT = 0

Abbreviations.

Max/min = highest and lowest air temperature at 1.2m in 24 hour period ending at 09 GMT

Rain = total rainfall and melted snowfall in 24 hour period ending at 09 GMT, millimetres. (Tr = trace, <.05mm).

Grass min = Lowest overnight temperature at grass tip level.

Sun = hours of bright sunshine, measured electronically. Frost = Number of hours with air temp below 0 deg C.

pp09 = Air pressure corrected to mean sea level at 0900 GMT, millibars.

Af = Air frost. Gf = Ground frost. Sf = Snow falling. Sl = Snow lying at 09 GMT.

Th = Thunder. Ha = Hail =>5mm. Ic = Hail <5mm or ice. Fg = Fog at 09 GMT.

Vec mean = 24 hour mean wind vector, ddd = direction in degrees from true north, ff = speed in knots.

Sp = 24 hour mean wind speed in knots.

Max gust = Highest gust in 24 hours, gg = speed in knots, HHhh = Time, hours and minutes, GMT.

High hr = Highest hourly mean wind, HH = hour commencing. Rain Hrs = Duration of rain, 24 hours to 09 GMT. Excludes snow/hail.

30cm and 100 cm are earth temperatures at those depths, read at 09 GMT.

Anom = Departure from 1981-2010 climatological average.

All temperatures in degrees Celsius.

Weather observations. Emmbrook, Wokingham, Berkshire.

Observations at 0900 GMT for OCTOBER 2017

Date	VV	N	dd	ff	gg	TT	TdTd	RH	r	PPP	a	ppp	ww	W1	W2	Nh	Cl	h	Cr	Ch	shs	NChs	shs	NChs	shs	Date	Remarks
1	62	8	20	07	12	15.9	14.8	93	10.4	1011.1	0	002	21	6	5	7	7	3	7	/	87707	88358			1		
2	63	7	25	10	20	14.7	9.7	72	7.4	1013.7	3	016	03	1	1	7	8	5	/	/	85825	83635			2	Cu hum	
3	82	0	27	04	15	13.0	7.5	69	6.4	1023.4	1	024	02	0	0	0	0	9	0	0					3		
4	84	7	24	09	16	11.8	7.9	77	6.6	1023.9	0	001	03	2	2	7	0	9	7	1		82359	86361		4	/Ac70 /Ci75 COTRA	
5	86	5	33	12	24	13.8	6.7	62	6.0	1017.1	3	044	01	8	1	1	8	5	4	1		81825	84075		5	1Sc40 1Ac58 Cu fra COTRA irisation	
6	82	1	34	07	15	11.4	6.9	74	6.1	1027.3	2	021	03	0	0	1	8	4	0	1		81818			6	1Sc40 1Ci80 COTRA	
7	86	7	23	10	20	14.4	11.9	85	8.6	1018.2	6	019	02	2	2	7	5	4	/	/	85611	87618		7	/Sc40		
8	82	6	31	03	06	13.4	10.4	82	7.8	1020.8	2	011	03	2	2	6	8	4	0	1		81812	85640		8	2Sc20 1Ci80 COTRA Cu hum	
9	62	7	20	05	09	15.1	12.4	84	8.9	1019.6	8	001	03	2	2	7	8	4	/	/	81810	83620	86650		9	Cu hum	
10	86	7	23	10	19	14.1	11.4	84	8.3	1016.1	3	005	02	2	2	7	5	4	3	/		87612			10	/Ac65	
11	75	8	20	09	22	14.8	11.0	78	8.1	1011.7	7	004	02	6	2	8	8	4	/	/	81818	88635		11	Cu fra		
12	70	7	22	07	13	13.0	10.0	82	7.5	1021.0	1	020	01	2	2	2	5	6	3	1		82635	87075		12	1Ac68 COTRA	
13	75	8	21	09	17	16.7	15.1	90	10.5	1022.0	2	012	02	2	2	8	6	3	/	/	86708	88712		13			
14	63	7	21	07	14	16.8	14.4	86	10.1	1024.7	3	010	01	2	2	7	5	3	/	/	82709	87637		14			
15	57	7	23	07	16	15.8	14.0	89	9.8	1018.2	3	001	05	1	1	7	5	3	/	/	85709	87614		15			
16	63	6	17	07	14	18.6	15.7	83	11.0	1014.4	5	008	15	1	1	6	0	9	8	1		84362	85365		16	/Ci78 COTRA Ac cas vir jpS	
17	68	7	23	06	12	12.2	7.7	74	6.5	1020.5	1	009	03	1	1	1	0	9	4	1		81360	87080		17	COTRA	
18	59	8	04	02	09	11.1	10.2	94	7.7	1012.3	4	000	62	6	2	8	5	3	/	/	81708	88612		18			
19	20	8	07	04	07	15.0	14.7	98	10.4	1004.7	8	014	60	6	4	8	6	2	/	/	86703	88705		19			
20	82	7	25	11	23	12.2	9.4	83	7.4	1005.0	1	049	02	6	2	7	5	4	/	/	86615	87635		20			
21	64	3	20	16	33	13.3	9.2	76	7.3	1001.9	7	002	25	8	1	2	9	4	6	3		81915	82820		21	1Ac62 1Ci70 jpSW	
22	70	3	25	13	23	10.9	4.8	66	5.3	1013.0	1	020	03	0	0	1	5	6	7	1		81642	83072		22	1Ac58 1Ac68	
23	30	8	20	06	12	13.0	12.2	95	8.8	1017.5	7	006	58	6	5	8	5	2	/	/	86705	88625		23			
24	82	8	21	07	17	16.6	14.8	89	10.4	1018.0	3	003	01	2	2	7	6	3	/	/	87708			24	/Cs75 COTRA		
25	84	4	26	06	12	15.3	12.2	82	8.8	1020.4	3	027	01	6	1	1	8	4	4	1		81812	83078		25	1Sc35 1Ac68 COTRA Parheliion	
26	17	8	05	01	03	11.9	11.7	99	8.4	1024.7	1	008	51	5	4	8	6	1	/	/	88702			26			
27	61	1	35	02	07	9.9	7.8	87	6.4	1034.3	2	028	03	0	0	1	6	3	0	1		81706			27	1Ci75	
28	70	7	25	06	11	7.9	6.8	93	6.0	1029.0	7	009	02	2	2	0	0	9	0	2		87080			28		
29	82	6	35	09	22	13.0	8.3	73	6.7	1022.1	3	029	01	6	2	4	8	4	0	1		81820	84645		29	3Ci78 COTRA Cu hum	
30	62	7	24	02	03	4.6	3.3	91	4.7	1032.5	2	014	03	1	1	0	0	9	0	1		87078			30	COTRA	
31	65	7	23	05	11	9.2	5.8	79	5.6	1027.3	2	002	03	2	2	1	5	4	7	2		81618	84359	86365	31	/Ci75 COTRA	

Mean vis = 25.3 km  
 Mean cloud = 6.1 77%  
 Mean wind speed = 7.1 kn  
 Mean gust = 15 kn  
 Mean TT = 13.2 °C  
 Mean TdTd = 10.3 °C  
 Mean RH = 82.9%  
 Mean r = 7.9 g/kg  
 Mean PPP = 1018.9 mbar

See appendix 2 below for full code details

VV = Visibility code (Code FM12-4377)  
 N = Total cloud amount, oktas  
 dd = Direction from which wind is blowing, tens of degrees true  
 ff = 10 minute mean wind speed, knots  
 gg = Highest gust in past hour, knots  
 TT = Air temperature at 1.2 m, deg Celsius  
 TdTd = Dew point temperature at 1.2 m, deg Celsius  
 RH = Relative humidity at 1.2 m  
 r = Humidity mixing ratio at 1.2 m, g/kg  
 PPP = Air pressure reduced to sea level, mbar  
 a = Characteristic of pressure tendency (Code FM12-0200)  
 ppp = 3 hr pressure tendency, tenths of mbar  
 ww = Present weather code (Code FM12-4677)  
 W1, W2 = Past weather code (Code FM12-4561)-  
 covers past 3 hours.  
 Nh = Amount of low cloud present, oktas  
 Cl = Type of low cloud (Code Fm12-0513)  
 h = Height of low cloud (Code FM12-1600)  
 Cm = Type of medium cloud (Code FM12-0515)  
 Ch = Type of high cloud (Code FM12-0509)  
 8 groups. 8 = indicator for cloud detail  
 N = Amount of cloud, oktas  
 C = Type of cloud (FM12-0500)  
 hshs= Height of cloud (FM12-1677)  
 Remarks : COTRA = persistent condensation trails present

Weather observations. Emmbrook, Wokingham, Berkshire.

Observations at 1500 GMT for OCTOBER 2017

Date	VV	N	dd	ff	gg	TT	TdTd	RH	r	PPP	a	ppp	ww	W1	W2	Nh	Cl	h	Cr	Cf	NChs	hshs	NChs	Date	Remarks
1	62	8	20	11	19	17.3	15.6	90	10.9	1009.4	8	019	20	5	2	8	6	3	/	/	86706	88708	1		
2	75	7	24	12	22	15.4	9.3	67	7.2	1014.0	2	001	21	6	2	1	1	6	7	/	81830	85360	87363	2	1Ac58 Cu hum
3	83	7	28	06	12	14.9	5.4	53	5.5	1024.5	5	002	03	1	1	5	4	6	0	5	85644	86080	3	2Cs78 COTRA	
4	82	7	25	09	22	15.1	8.1	63	6.7	1021.4	7	014	02	2	2	6	8	6	3	1	81832	86640	4	/Ac58 /Ci80 COTRA Cu hum	
5	86	2	29	09	17	15.8	5.1	49	5.4	1019.9	2	005	02	0	0	2	1	6	0	1	82845		5	1Ci75 Cu hum Absent vv&cld est	
6	86	7	29	06	12	14.4	6.0	57	5.8	1027.0	7	003	03	1	1	1	4	6	3	8	81833	87275	6	1Sc40 1Ac68 COTRA Cu hum Parhelia U/a cont	
7	86	8	25	08	17	16.3	12.3	77	8.8	1014.9	7	017	02	5	6	5	8	4	2	/	84818	88465	7	2Sc35 Cu hum	
8	84	4	24	05	09	16.3	9.5	64	7.3	1020.6	7	006	01	1	1	4	8	6	0	1	81830	83640	8	2Sc50 1Ci80 COTRA Cu med	
9	84	7	26	06	15	15.8	9.9	68	7.5	1017.8	6	013	02	8	2	7	8	4	/	/	82818	87635	9	Cu hum	
10	84	7	21	07	14	17.2	13.1	77	9.3	1014.2	7	017	21	6	2	3	8	4	3	1	82818	86080	10	2Sc25 1Ac68 COTRA Cu med	
11	80	7	21	15	28	16.2	12.0	76	8.7	1008.8	6	016	02	6	2	5	8	4	7	/	83818	83656	87362	11	Cu hum
12	82	7	23	10	19	16.6	8.1	57	6.6	1020.9	7	005	02	2	2	2	4	6	0	1	82635	86080	12	1Ci75 COTRA	
13	81	7	21	09	17	17.6	14.7	83	10.3	1022.2	5	009	02	2	2	7	5	4	/	/	86618	87625	13		
14	80	8	21	04	11	18.3	14.2	77	9.9	1024.0	6	004	02	2	2	8	8	5	/	/	82820	88625	14	Cu hum	
15	62	2	20	09	15	18.4	13.3	72	9.4	1016.9	7	007	01	1	1	2	5	5	0	9	82622		15	1Cc75	
16	65	7	20	12	35	16.5	10.6	68	7.9	1014.7	1	007	02	2	2	7	1	5	/	/	82828	87xx56	16	Cu hum Thick elevated hz lyr obscuring sun	
17	62	8	22	03	07	12.3	9.1	81	7.1	1018.4	6	019	60	6	2	2	5	7	7	/	82650	83357	88460	17	
18	20	8	06	03	08	13.4	12.6	95	9.1	1010.2	6	012	20	5	2	8	6	2	/	/	86703	88704	18		
19	65	8	20	11	21	15.4	13.8	90	9.9	1001.2	5	005	21	6	5	3	8	3	7	/	81708	83656	86358	19	1Cu15 8As65 Cu med
20	81	6	23	10	20	13.0	6.1	63	5.9	1009.0	2	014	03	1	1	2	5	6	7	6	82635	83272	86078	20	1Ac68 COTRA Halo 22° part
21	62	6	22	16	30	13.0	8.3	73	6.8	1001.7	3	002	80	8	1	6	3	5	6	/	82925	85830	21	/Sc50 /Ac62	
22	62	6	26	07	18	12.3	7.0	70	6.2	1015.3	0	006	25	8	2	6	8	6	0	0	83830	85645	22	Cu med jpNW, N&S Rainbow	
23	61	8	23	04	09	15.8	14.3	91	10.1	1016.7	6	003	20	5	2	8	5	3	/	/	87708	88612	23	jpNW	
24	81	8	22	08	21	17.6	14.5	82	10.2	1018.0	3	001	03	2	2	8	5	4	/	/	86613	88635	24		
25	84	4	24	03	09	16.9	8.3	57	6.7	1021.7	2	001	01	1	1	1	1	6	3	9	81835		25	2Ac69 2Cc71 2Ci80 COTRA	
26	56	8	24	04	07	15.4	14.8	96	10.3	1024.7	5	001	51	5	2	8	5	3	/	/	82707	85612	88635	26	
27	88	1	33	05	09	13.4	5.6	59	5.5	1034.7	5	001	02	0	0	1	4	6	0	0	81635		27		
28	84	6	27	06	18	15.8	11.0	73	8.0	1024.1	6	020	03	2	2	1	8	5	4	1	81825	85078	28	1Sc30 2Ac57 1Ac62 COTRA	
29	81	2	01	08	17	11.9	3.7	57	4.9	1025.0	1	009	01	1	1	2	4	6	0	0	81840		29	2Sc45 Cu hum	
30	80	5	23	02	05	10.5	3.1	60	4.6	1030.9	7	011	01	2	2	1	4	6	4	1	81632	85080	30	1Ac64 COTRA	
31	75	8	22	06	11	12.4	8.3	76	6.7	1025.0	7	013	02	2	2	1	0	9	7	7	82361	88272	31	1Ac65 COTRA	

Mean vis = 32.7 km

Mean cloud = 6.3 78%

Mean wind speed = 7.5 kn

Mean gust = 16 kn

Mean TT = 15.2 °C

Mean TdTd = 9.9 °C

Mean RH = 71.6 %

Mean r = 7.7 g/kg

Mean PPP = 1018.3 mbar

See appendix 2 below for full code details

VV = Visibility code (Code FM12-4377)

N = Total cloud amount, oktas

dd = Direction from which wind is blowing, tens of degrees true

ff = 10 minute mean wind speed, knots

gg = Highest gust in past hour, knots

TT = Air temperature at 1.2 m, deg Celsius

TdTd = Dew point temperature at 1.2 m, deg Celsius

RH = Relative humidity at 1.2 m

r = Humidity mixing ratio at 1.2 m, g/kg

PPP = Air pressure reduced to sea level, mbar

a = Characteristic of pressure tendency (Code FM12-0200)

ppp = 3 hr pressure tendency, tenths of mbar

ww = Present weather code (Code FM12-4677)

W1, W2 = Past weather code (Code FM12-4561)- covers past 3 hours.

Nh = Amount of low cloud present, oktas

Cl = Type of low cloud (Code Fm12-0513)

h = Height of low cloud (Code FM12-1600)

Cm = Type of medium cloud (Code FM12-0515)

Ch = Type of high cloud (Code FM12-0509)

8 groups. 8 = indicator for cloud detail

N = Amount of cloud, oktas

C = Type of cloud (FM12-0500)

hshs= Height of cloud (FM12-1677)

Remarks : COTRA = persistent condensation trails present

Wokingham Sunshine Hourly analysis  2017	Hour	01-Oct	02-Oct	03-Oct	04-Oct	05-Oct	06-Oct	07-Oct	08-Oct	09-Oct	10-Oct	11-Oct	12-Oct	13-Oct	14-Oct	15-Oct	16-Oct
	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	6	0.00	0.00	0.51	0.00	0.00	0.49	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00
	7	0.00	0.80	1.00	0.09	0.00	1.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.04	0.00	0.80
	8	0.00	0.85	1.00	0.79	0.81	1.00	0.00	0.27	0.68	0.02	0.00	0.93	0.00	0.00	0.00	0.21
	9	0.00	0.18	1.00	0.01	1.00	0.99	0.00	0.38	0.20	0.00	0.00	1.00	0.00	0.00	0.00	0.90
	10	0.00	0.48	0.96	0.00	1.00	0.74	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.01	0.59
	11	0.00	0.78	0.79	0.00	1.00	0.56	0.00	0.10	0.05	0.00	0.01	0.87	0.00	0.00	0.02	0.01
	12	0.00	0.04	0.25	0.00	0.70	0.43	0.00	0.01	0.03	0.00	0.33	0.87	0.01	0.00	0.18	0.00
	13	0.00	0.00	0.63	0.06	0.82	0.75	0.00	0.26	0.02	0.00	0.16	0.84	0.00	0.00	0.61	0.00
	14	0.00	0.00	0.52	0.15	0.82	0.41	0.00	0.41	0.00	0.51	0.00	0.92	0.00	0.00	0.99	0.00
	15	0.00	0.01	0.29	0.00	0.70	0.66	0.00	1.00	0.00	0.20	0.00	0.75	0.09	0.00	1.00	0.35
	16	0.00	0.00	0.00	0.00	0.29	0.16	0.00	0.26	0.00	0.11	0.00	0.42	0.00	0.00	0.91	0.61
	17	0.00	0.00	0.05	0.00	0.16	0.00	0.00	0.10	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00
	18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tot		<b>0.00</b>	<b>3.14</b>	<b>7.01</b>	<b>1.11</b>	<b>7.30</b>	<b>7.20</b>	<b>0.00</b>	<b>2.78</b>	<b>1.01</b>	<b>0.90</b>	<b>0.49</b>	<b>7.61</b>	<b>0.10</b>	<b>0.04</b>	<b>3.71</b>	<b>3.46</b>

Hour	17-Oct	18-Oct	19-Oct	20-Oct	21-Oct	22-Oct	23-Oct	24-Oct	25-Oct	26-Oct	27-Oct	28-Oct	29-Oct	30-Oct	31-Oct	Mean
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03
7	1.00	0.00	0.00	0.00	0.07	0.49	0.00	0.00	0.15	0.00	0.76	0.21	0.11	0.62	0.00	0.23
8	1.00	0.00	0.00	0.00	0.93	1.00	0.00	0.00	1.00	0.00	1.00	0.89	0.81	1.00	0.00	0.46
9	1.00	0.00	0.00	0.00	0.46	0.90	0.00	0.00	0.99	0.00	1.00	1.00	0.56	1.00	0.00	0.41
10	0.39	0.00	0.00	0.02	0.58	0.47	0.00	0.00	0.64	0.00	1.00	0.69	0.84	1.00	0.12	0.34
11	0.00	0.00	0.00	0.15	0.57	0.40	0.00	0.00	1.00	0.00	0.97	0.55	0.01	1.00	0.10	0.29
12	0.00	0.00	0.00	0.65	0.67	0.78	0.00	0.31	1.00	0.00	1.00	0.58	0.07	1.00	0.00	0.29
13	0.00	0.00	0.00	0.65	0.57	0.35	0.00	0.00	1.00	0.00	1.00	0.51	0.66	1.00	0.00	0.32
14	0.00	0.00	0.00	1.00	0.14	0.04	0.00	0.00	1.00	0.00	0.81	0.96	1.00	1.00	0.00	0.34
15	0.00	0.00	0.00	0.25	0.41	0.26	0.00	0.00	0.50	0.00	1.00	0.38	0.86	1.00	0.00	0.31
16	0.00	0.00	0.00	0.00	0.15	0.01	0.00	0.00	0.42	0.00	0.68	0.20	0.21	0.11	0.00	0.15
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tot	<b>3.41</b>	<b>0.00</b>	<b>0.01</b>	<b>2.72</b>	<b>4.54</b>	<b>4.72</b>	<b>0.00</b>	<b>0.32</b>	<b>7.69</b>	<b>0.00</b>	<b>9.21</b>	<b>5.97</b>	<b>5.14</b>	<b>8.73</b>	<b>0.23</b>	<b>98.55</b>

OCTOBER 2017	T mn	Tx	Time	Tn	Time	RHmn	RH x	Time	RH n	Time	Tdmn	r mn	r x	Time	r n	Time	p mn	p x	Time	p n	Time	R tot
1	15.84	17.8	1131	13.5	42	90.6	96.8	438	77.8	1135	14.3	10.1	11.3	1708	8.6	2357	1010.59	1012.7	3	1008.9	2114	0.3
2	13.99	17.5	1159	9.9	2353	74.6	92.0	2258	52.8	1159	9.4	7.3	8.7	0	6.1	1102	1013.81	1017.7	2357	1010.2	0	0
3	11.54	17.6	1332	7.8	636	72.9	92.0	235	41.8	1333	6.5	6.0	7.4	1322	5.0	1318	1023.27	1026.2	2203	1017.5	1	0
4	11.82	16.3	1414	7.9	131	75.7	87.4	621	59.1	1504	7.6	6.4	7.6	1308	5.4	130	1021.98	1025.7	17	1015.0	2356	0
5	13.33	17.0	1342	8.4	2351	68.4	85.9	733	45.9	1509	7.4	6.5	9.6	717	4.9	1728	1018.30	1024.2	2359	1011.8	419	0.2
6	10.89	15.5	1328	6.7	700	73.2	92.5	703	50.6	1326	6.1	5.8	6.5	1059	5.2	1244	1026.09	1028.0	906	1024.0	0	0.1
7	13.73	16.8	1356	9.8	0	80.5	93.3	1208	65.5	1704	10.4	7.8	10.1	1208	6.0	115	1018.27	1024.8	1	1014.4	1538	0.3
8	12.17	17.3	1507	8.2	435	84.2	97.6	2241	56.3	1516	9.4	7.3	8.3	1426	6.4	435	1020.42	1022.0	1953	1017.8	13	0
9	12.63	16.4	1232	8.6	131	86.4	97.4	132	67.0	1459	10.4	7.8	9.9	1130	6.6	131	1018.88	1021.8	1	1016.5	2359	0
10	14.16	17.8	1509	11.0	2	86.6	95.1	2151	74.4	1507	11.9	8.7	9.9	2154	7.4	2	1015.13	1016.7	24	1013.6	2346	0.5
11	14.48	17.3	1231	10.4	2359	83.0	92.7	1701	70.1	1327	11.6	8.5	10.0	1838	7.0	2342	1011.40	1014.5	2359	1008.4	1533	1.2
12	12.45	17.7	1334	9.1	422	81.8	97.1	2357	53.1	1405	9.2	7.2	8.5	1104	6.4	1454	1020.13	1022.1	2102	1014.4	0	0.1
13	16.07	18.9	1259	9.1	2	87.5	98.5	105	76.9	1301	14.0	9.8	11.0	1251	6.8	2	1022.12	1023.8	2250	1020.5	603	0.1
14	16.27	19.3	1216	11.9	2043	86.2	98.2	2101	72.6	1344	13.9	9.8	11.0	1334	8.2	2043	1023.60	1025.0	920	1021.2	2356	0
15	14.62	19.2	1320	10.6	2358	88.8	98.9	644	67.4	1321	12.7	9.1	10.2	816	7.7	2358	1017.85	1021.3	0	1016.5	1551	0
16	14.70	21.5	1019	9.7	154	79.6	99.2	703	62.1	1347	11.0	8.2	11.5	811	6.2	2203	1015.71	1018.9	2343	1013.6	1307	0
17	11.51	13.8	1022	9.3	630	82.1	95.6	2359	66.3	1029	8.5	6.8	7.7	1606	6.0	552	1018.69	1020.8	956	1015.5	2359	0.5
18	12.27	14.7	2323	10.3	122	95.8	98.3	2158	91.9	1207	11.6	8.5	10.2	2323	7.4	0	1011.56	1015.7	3	1009.1	2355	1.1
19	14.49	17.2	1106	11.9	2322	92.8	98.7	233	82.9	1305	13.3	9.6	11.3	1034	7.9	2355	1003.03	1009.4	18	997.6	2243	6.5
20	12.76	15.2	1212	11.5	1751	80.6	94.6	500	56.6	1413	9.4	7.4	9.3	2359	5.6	1413	1004.11	1009.1	1446	996.5	324	2.1
21	12.88	15.4	1342	11.2	1942	80.0	96.3	103	57.0	1343	9.4	7.4	9.7	116	6.2	1343	1002.20	1006.0	2354	1000.8	1331	3.8
22	10.78	13.9	1302	8.7	737	73.3	88.8	2359	48.7	1257	6.1	5.9	6.9	4	4.6	1213	1013.95	1019.0	2220	1005.9	0	0.3
23	13.37	16.1	1557	9.1	53	91.8	96.1	1023	87.9	402	12.1	8.8	10.3	1548	6.4	17	1017.65	1018.9	136	1016.4	1536	0.4
24	16.00	18.6	1211	13.9	21	88.1	95.9	243	78.4	1212	14.0	9.9	10.9	1210	9.0	2358	1017.88	1018.6	1808	1017.1	2248	0
25	13.84	18.1	1237	8.1	2343	82.5	97.7	2359	49.8	1423	10.7	8.0	9.4	652	6.1	1423	1020.64	1024.4	2104	1016.3	345	0.1
26	12.65	15.8	1421	7.2	124	96.6	99.0	831	92.4	2356	12.1	8.8	10.5	1421	6.0	125	1025.02	1027.9	2358	1023.5	308	0.4
27	10.06	14.7	1305	5.6	2358	83.7	97.7	743	49.6	1329	7.2	6.2	9.0	1	4.9	1337	1033.19	1035.5	1755	1027.8	0	0
28	10.60	17.1	1413	4.6	512	86.3	98.0	645	65.2	1227	8.3	6.8	8.5	1403	5.0	512	1026.54	1033.4	0	1020.1	2352	0
29	10.64	14.6	414	1.8	2356	76.6	97.4	2358	50.9	1410	6.5	6.1	8.5	702	4.1	2356	1023.82	1029.8	2356	1018.2	245	0.1
30	4.73	11.4	1252	-0.8	541	87.0	98.8	735	58.5	1418	2.5	4.5	5.7	1249	3.4	541	1031.09	1032.7	1023	1029.7	0	0
31	9.31	13.1	1338	4.2	31	83.1	96.0	2341	70.1	1326	6.5	6.0	7.0	1338	4.6	10	1026.14	1030.0	1	1023.0	2359	0
Total																						18.1
Mean	12.73	16.56		8.67		83.2	95.60		64.50		9.81	7.64	9.23		6.16		1018.49	1021.83		1014.90		
Max	16.27	21.46		13.86		96.6	99.20		92.40		14.30	10.14	11.48		8.99		1033.19	1035.47		1029.74		
Min	4.73	11.44		-0.84		68.4	85.90		41.80		2.53	4.50	5.70		3.43		1002.20	1006.00		996.52		

Wokingham Automatic Weather Station  
 AWS samples taken every 0.5 seconds  
 x and n refer to maximum and minimum respectively

**Readings taken at Wokingham Climatological Station, Emmbrook, Berkshire**  
**Lat 51.425 N, Long 0.853 W, NGR (SU) 798701**  
**Altitude 45 m ASL.**

Tmn = 00 to 24 GMT mean air temperature at 1.2 m, deg C  
 RHmn = 00-24 GMT mean relative humidity at 1.2 m, percent  
 Tdmn = 00-24 GMT mean dew point at 1.2 m, deg C  
 rmn = 00-24 GMT mean humidity mixing ratio, g/kg  
 pmn = 00-24 GMT mean air pressure reduced to mean sea level, mbar  
 Time = hours and minutes in GMT of extreme values

Temperature and humidity are from an aspirated Vaisala HMP45 unit  
 Pressure is from a Setra CS100 sensor  
 Data is logged on a Campbell Scientific CR10X measurement and control system

## **Explanation and definition of some of the terms used in the Wokingham Weather Reports.**

**Average:** Generally refers to the 30 year climatological average, currently 1981 to 2010. This will be next updated in 2020. For some parameters, notably wind, the climatological average is not available, and if the word average is used in the context of wind, it refers to the average for the period for which data is held, namely 1988 to present.

For sunshine, there was a change, in July 1999, in the type of instrument used to detect sunshine amount, making the climatological average based on the old instrument of little use. In general, the new instrument produces higher values in the winter half year, and lower ones in the summer half, than the old type, due to a combination of faster reaction and higher sensitivity than the old type. The average used in this case is based on a theoretical equivalent 1981 to 2010 average, drawn from comparison with the Met Office published tables of departure from climatological average sunshine in the months since 2000 for their area 'Southern England'. Users of the Wokingham Monthly Weather reports should be aware of this, and regard anomalies for sunshine published therein as a guide only, until such time has elapsed since the introduction of the new instrument that a genuine average becomes available.

**Mean:** The mean of the data under discussion, often the monthly mean of daily data. The mean is obtained by summation of the individual values and dividing by the number of values. The term 'daily mean' in respect of temperature is defined as '(max + min) / 2'. A true daily 24 hour (00 to 24 GMT) mean temperature is available from the Automatic Weather Station (AWS), and is currently published on page 7 of the Wokingham Monthly Weather report, on the Wokingham Weather web site, page 1. <http://www.woksat.info/wwp1.html>

**Anomaly:** When a value is given for anomaly, this will have one of the following meanings:

- a): The departure of a mean from the current climatological average.
- b): The departure of a value on a particular day from the average for that day, (this need not be a climatological average).

When the word anomaly is used in respect of temperature, any values given are in °C. In respect of rainfall or sunshine, percent. In respect of wind, mph. In respect of pressure, millibars (hpa).

**Categories:** Reference may be made in the reports to 'categories'. Each category has a strict statistical range, as outlined below.

**Temperature:** The terms cold/mild are used in the winter half year, and cool/warm in the summer half. The term 'normal' is used when the individual mean (monthly, seasonal or annual) value is within 20 % of the median of all ranked values for that month/season/year.

**Mild/warm:** The value lies between 10 % and 30 % below the highest value in the ranked series.

**Very mild/very warm:** The value lies within 10 % of the highest value in the ranked series.

**Cold/cool:** The value lies between 10 % and 30 % above the lowest value in the ranked series.

**Very cold/very cool:** The value lies within 10 % of the lowest value in the ranked series.

**Sunshine:** The terms for sunshine are very sunny, sunny, normal, dull and very dull.

The definition of these terms follow the same rules as for temperature.

**Rainfall:** The terms for rainfall are very dry, dry, normal, wet and very wet.

The definition of the term 'normal' follows the same rule as for temperature and sunshine.

**Wet:** The value lies between 10 % and 30% of the highest value in the ranked series.

**Very wet:** The value lies within 10 % of the highest value in the ranked series.

**Dry:** The value lies between 10 % and 30 % above the lowest value in the ranked series.

**Very dry:** The value lies within 10 % of the lowest value in the ranked series.

**Long-term:** Mention may be made in the reports to the 'long-term'. The long-term record comprises a temperature/rainfall/sunshine data series compiled from records of various weather stations in the Wokingham area in the years prior to the establishment of the weather station at Emmbrook in 1976 together with data from this station.

In the case of monthly max, min and mean temperature and of rainfall total the series starts in 1882. For temperature extremes, the highest max and lowest min go back to 1904, and lowest max and highest min to 1913.



**Rank:** The word rank refers to the position of a value for a particular month/season/year in the ranked series, and may be expressed relative to either the highest or lowest value in the series. The central value in the ranked series is known as the **median**. This value may be different from the average of the whole series if the population is skewed. It can also be different from the climatological average which only refers to a 30 year period.

**Month:** Calendar month.

**Season:** Spring, March to May.

Summer, June to August

Autumn, September to November

Winter, December to February.

When discussing 'winter', if a single year is given this refers to the year in which the January/February fall.

**Annual or Year:** The calendar year, 1<sup>st</sup> January to 31<sup>st</sup> December.

**The climatological day:** runs from 0900 to 0900 GMT. The max temperature and rainfall read at 0900 hours are attributed to the previous day (thrown back), as is the duration of measurable rain. The min temperature and grass min read at 0900 hours are attributed to the day of reading. Pressure read at 0900 GMT, and the monthly mean pressure is the mean of the 0900 GMT readings. Sunshine data, wind data, rainfall rate data and 24 hour data from the AWS use the normal 00-24 GMT day.

**Frost:** An air frost day is recorded when the minimum temperature read at 0900 GMT on that day is  $-0.1^{\circ}\text{C}$  or below. A ground frost day is recorded when the grass minimum temperature read at 0900 GMT on that day is  $-0.1^{\circ}\text{C}$  or lower.

Duration of air frost is defined as the number of minutes that the AWS one minute average temperature is below  $0.0^{\circ}\text{C}$ , and the day runs from midnight to midnight.

**Snow:** A day with snow falling is triggered if snow falls at any time in the 24 hours from midnight on that day. A day with snow lying is entered if there is at least 50% snow cover at the 0900 GMT observation.

Snow depth is the depth of undrifted snow. Snow that collects in the raingauge funnel is melted and the amount recorded as rainfall.

**Hail:** A day of hail is recorded if hailstones 5 mm or more in diameter are observed or recorded on the hail pad in a 24 hour period starting at midnight.

A day of small hail is recorded if hailstones less than 5 mm diameter are observed or recorded in a 24 hour period starting at midnight. The term small hail also includes various other types of ice meteor such as ice pellets, snow grains and some types of snow pellets.

**Fog:** A day with fog is recorded if the horizontal visibility at 0900 GMT is below 1000 m.

**Thunder:** A day of thunder is recorded if thunder is heard in the 24 hour period from midnight on that day. The appearance of lightning without thunder being heard does not qualify as a thunder day.

**Trace of rainfall:** A trace of rain, entered as 'tr' in the daily log, is recorded if rain is observed to fall but is of insufficient quantity to collect in the raingauge, or if the amount of rain in the gauge is less than 0.05 mm.

**Dry spell:** A dry spell is defined as a period of 5 or more consecutive dry days.

**Dry day:** A dry day is one with less than 0.2 mm of rainfall.

**Rain day:** A rain day is one with 0.2 mm or more of rainfall.

**Wet day:** A wet day is one having 1.0 mm or more of rainfall.

## Appendix 2.

Explanation and decode for code figures used in the Wokingham 0900 and 1500 GMT observations

**VV** : Visibility.

Code figures 00 to 50 are in km and tenths e.g. 01 = 0.1 km = 100 m, 33 = 3.3 km, 50 = 5.0 km

Code figures 60 to 80. Subtract 50 to obtain visibility in km. e.g. 56 = 6 km, 65 = 15 km, 77 = 27 km.

Code figures 81 to 89. Subtract 50 and add 5 for every one above 80. e.g. 83 = 45 km, 86 = 60 km.

Code figure 89 = visibility above 70 km.

**N** : Total cloud amount in okta (eighths of sky covered). 9 = sky obscured (e.g. by fog or snow)

**dd** : Wind direction in tens of degrees from true north. Wind is measured at a height of 10 m, and the direction is the mean over a period of 10 minutes ending at the observation time.

**ff** : Wind speed in knots, measured at 10 m, and is the mean over a period of 10 minutes ending at observation time.

**gg** : Wind gust in knots at 10 m. The highest gust in the 60 minutes up to observation time.

**TT** : Air temperature at 1.2m, degrees C and tenths.

**TdTd** : Dew point temperature at 1.2m, degrees C and tenths.

**RH** : Relative humidity at 1.2m, %.

**r** : Humidity mixing ratio (amount of water vapour per kg of air), grams and tenths.

**PPP** : Air pressure reduced to MSL, millibars and tenths.

**a** : Characteristic of pressure tendency during the past 3 hours.

Code figures 0 to 3, pressure higher than 3 hours ago, 5 to 8, pressure lower than 3 hours ago

Code figure 0 = Increasing then decreasing, pressure the same as or higher than 3 hours ago

1 = Increasing then steady or increasing more slowly

2 = Increasing steadily or unsteadily

3 = Decreasing or steady then increasing, or increasing then increasing more rapidly

4 = Steady, pressure the same as 3 hours ago

5 = Decreasing then increasing, pressure lower than 3 hours ago

6 = Decreasing then steady or decreasing more slowly

7 = Decreasing steadily or unsteadily

8 = Steady or increasing then decreasing, or decreasing then decreasing more rapidly

**ppp** : 3 hour pressure tendency in tenths of a millibar

**ww** : Present weather code figures, 00 to 99.

Present weather decode:

00 = Cloud development not observed or not observable

01 = Clouds generally dissolving or becoming less developed

02 = State of sky on the whole unchanged

03 = Clouds generally increasing or becoming more developed

04 = Visibility reduced by smoke, e.g. veldt or forest fires, industrial smoke or volcanic ashes.

05 = Haze, visibility reduced by extremely small dry particles (RH less than appx. 95 %)

06 = Widespread dust in suspension, not raised by the wind near the station at the time of the observation

07 = Dust or sand raised by the wind at or near the station at the time of the observation, but no well-developed dust whirls or sand whirls, and no duststorm or sandstorm seen: In marine environments, blowing spray at the station.

08 = Well-developed dust or sand whirls seen at or near the station during the preceding hour or at the time of the observation, but no duststorm or sandstorm.

09 = Duststorm or sandstorm within sight at the time of the observation, or at the station during the preceding hour

10 = Mist  
11 = Patches of shallow fog not deeper than 2 metres on land  
12 = More or less continuous shallow fog not deeper than 2 metres on land  
13 = Lightning visible, no thunder heard  
14 = Precipitation within sight, not reaching the ground  
15 = Precipitation within sight, reaching the ground more than 5 km from the station  
16 = Precipitation within sight, reaching the ground, near to but not at the station  
17 = Thunderstorm, but no precipitation at the time of the observation  
18 = Squalls at or within sight of the station at the time of the observation or during the preceding hour  
19 = Funnel cloud(s) at or within sight of the station at the time of the observation or during the preceding hour

20 = Drizzle (not freezing) at the station during the preceding hour but not at the time of the observation  
21 = Rain (not freezing) at the station during the preceding hour but not at the time of the observation  
22 = Snow at the station during the preceding hour but not at the time of the observation  
23 = Rain and snow or ice pellets at the station during the preceding hour but not at the time of the observation  
24 = Freezing drizzle or freezing rain at the station during the preceding hour but not at the time of the observation  
25 = Shower(s) of rain at the station during the preceding hour but not at the time of the observation  
26 = Shower(s) of snow or rain and snow at the station during the preceding hour but not at the time of the observation  
27 = Shower(s) of hail or rain and hail at the station during the preceding hour but not at the time of the observation  
28 = Fog or ice fog at the station during the preceding hour but not at the time of the observation  
29 = Thunderstorm, with or without precipitation at the station during the preceding hour but not at the time of the observation

30 = Slight or moderate duststorm or sandstorm has decreased during the preceding hour  
31 = Slight or moderate duststorm or sandstorm with no appreciable change during the past hour  
32 = Slight or moderate duststorm or sandstorm has begun or increased during the past hour  
33 = Severe duststorm or sandstorm has decreased during the preceding hour  
34 = Severe duststorm or sandstorm with no appreciable change during the past hour  
35 = Severe duststorm or sandstorm has begun or increased during the past hour  
36 = Slight or moderate drifting snow generally below eye level  
37 = Heavy drifting snow generally below eye level  
38 = Slight or moderate blowing snow generally above eye level  
39 = Heavy blowing snow generally above eye level

40 = Fog or ice fog at a distance at the time of the observation, but not at the station during the preceding hour, the fog extending to a level above that of the observer.  
41 = Fog or ice fog in patches  
42 = Fog or ice fog, sky visible has become thinner during the past hour  
43 = Fog or ice fog, sky invisible has become thinner during the past hour  
44 = Fog or ice fog, sky visible no appreciable change during the past hour  
45 = Fog or ice fog, sky invisible no appreciable change during the past hour  
46 = Fog or ice fog, sky visible has begun or become thicker during the past hour  
47 = Fog or ice fog, sky invisible has begun or become thicker during the past hour  
48 = Fog, depositing rime, sky visible  
49 = Fog depositing rime, sky invisible

50 = Drizzle, not freezing, intermittent slight at time of observation  
51 = Drizzle, not freezing, continuous slight at time of observation  
52 = Drizzle, not freezing, intermittent moderate at time of observation  
53 = Drizzle, not freezing, continuous moderate at time of observation  
54 = Drizzle, not freezing, intermittent heavy at time of observation  
55 = Drizzle, not freezing, continuous heavy at time of observation  
56 = Drizzle, freezing, slight  
57 = Drizzle, freezing, moderate or heavy (dense)  
58 = Drizzle and rain, slight  
59 = Drizzle and rain, moderate or heavy

60 = Rain, not freezing, intermittent slight at time of observation  
61 = Rain, not freezing, continuous slight at time of observation  
62 = Rain, not freezing, intermittent moderate at time of observation  
63 = Rain, not freezing, continuous moderate at time of observation  
64 = Rain, not freezing, intermittent heavy at time of observation  
65 = Rain, not freezing, continuous heavy at time of observation  
66 = Rain, freezing, slight  
67 = Rain, freezing, moderate or heavy  
68 = Rain or drizzle and snow, slight  
69 = Rain or drizzle and snow, moderate or heavy

70 = Intermittent fall of snowflakes slight at time of observation  
71 = Continuous fall of snowflakes slight at time of observation  
72 = Intermittent fall of snowflakes moderate at time of observation  
73 = Continuous fall of snowflakes moderate at time of observation  
74 = Intermittent fall of snowflakes heavy at time of observation  
75 = Continuous fall of snowflakes heavy at time of observation  
76 = Diamond dust (with or without fog)  
77 = Snow grains (with or without fog)  
78 = Isolated star-like snow crystals (with or without fog)  
79 = Ice pellets

80 = Rain shower(s), slight  
81 = Rain shower(s), moderate or heavy  
82 = Rain shower(s), violent  
83 = Shower(s) of rain and snow mixed, slight  
84 = Shower(s) of rain and snow mixed, moderate or heavy  
85 = Snow shower(s), slight  
86 = Snow shower(s), moderate or heavy  
87 = Shower(s) of snow pellets or small hail, with or without rain or rain and snow mixed, slight  
88 = Shower(s) of snow pellets or small hail, with or without rain or rain and snow mixed, moderate or heavy  
89 = Shower(s) of hail, with or without rain or rain and snow mixed, not associated with thunder, slight  
90 = Shower(s) of hail, with or without rain or rain and snow mixed, not associated with thunder, moderate or heavy

91 = Slight rain at time of observation, thunderstorm during the past hour but not at time of observation  
92 = Moderate or heavy rain at time of observation, thunderstorm during the past hour but not at time of observation  
93 = Slight snow, or rain and snow mixed, or hail at time of observation, thunderstorm during the past hour but not at time of observation  
94 = Moderate or heavy snow, or rain and snow mixed, or hail at time of observation, thunderstorm during the past hour but not at time of observation  
95 = Thunderstorm, slight or moderate, without hail but with rain and or snow at time of observation  
96 = Thunderstorm, slight or moderate, with hail at time of observation  
97 = Thunderstorm, heavy, without hail but with rain and or snow at time of observation  
98 = Thunderstorm combined with duststorm or sandstorm at time of observation  
99 = Thunderstorm, heavy, with hail at time of observation

Hail includes large hail, small hail and snow pellets.

**W1, W2 :** Past weather (for 0900 and 1500 GMT observations, the period covered is 3 hours)

Code figures:

- 0 = Cloud covering half or less of the sky throughout the period
- 1 = Cloud covering more than half the sky during only part of the period
- 2 = Cloud covering more than half the sky throughout the period
- 3 = Sandstorm, duststorm or blowing snow
- 4 = Fog or ice fog or thick haze (visibility less than 1000 m)
- 5 = Drizzle
- 6 = Rain
- 7 = Snow or rain and snow mixed
- 8 = Shower(s)
- 9 = Thunderstorm(s) with or without precipitation

**Nh :** Amount of low cloud, or medium cloud if no low cloud present, okta

**Cl :** Type of low cloud

- 0 = No low cloud
- 1 = Cumulus with little vertical extent and seemingly flattened, or ragged Cumulus other than bad weather, or both
- 2 = Cumulus of moderate or strong vertical extent, either accompanied or not by other Cumulus or Stratocumulus all having their bases at the same level
- 3 = Cumulonimbus whose summits, at least partially, lack sharp outline, but are neither clearly fibrous (cirriform), nor in the form of an anvil; Cumulus, Stratocumulus or Stratus may also be present
- 4 = Stratocumulus formed by the spreading out of Cumulus; Cumulus may also be present
- 6 = Stratus in a more or less continuous sheet or layer, or ragged shreds, or both, but no Stratus fractus of bad weather
- 7 = Stratus fractus of bad weather or Cumulus fractus of bad weather or both (pannus), usually below Altostratus or Nimbostratus
- 8 = Cumulus and Stratocumulus other than that formed by the spreading out of Cumulus, the bases of the Cumulus and Stratocumulus are not at the same level.
- 9 = Cumulonimbus, the upper part of which is clearly fibrous (cirriform), often in the form of an anvil, either accompanied or not by any other type(s) of low cloud
- / = Types of low cloud invisible due to darkness, fog, blowing dust or sand or other similar phenomena.

'Bad weather' denotes the conditions which generally exist during precipitation and a short time before and after.

**Cm :** Type of medium cloud.

- 0 = No medium cloud.
- 1 = Altostratus, the greater part of which is semi-transparent; through this part the sun or moon may be weakly visible, as through ground glass
- 2 = Altostratus, the greater part of which is sufficiently dense to hide the sun or moon, or Nimbostratus
- 3 = Altocumulus, the greater part of which is semi-transparent; the various elements of the cloud change only slowly and are all at a single level
- 4 = Altocumulus in patches (often in the form of almonds or fishes), the greater part of which is semi-transparent ; the clouds occur at one or more levels and the elements are continually changing in appearance
- 5 = Altocumulus in bands semi-transparent, of Altocumulus in one or more fairly continuous layers (semi-transparent or opaque), progressively invading the sky; these Altocumulus clouds generally thicken as a whole
- 6 = Altocumulus resulting from the spreading out of Cumulus (or Cumulonimbus)
- 7 = Altocumulus in two or more layers, usually opaque in places, and not progressively invading the sky; or opaque layer of Altocumulus not progressively invading the sky; or Altocumulus together with Altostratus or Nimbostratus
- 8 = Altocumulus with sproutings in the form of small towers or battlements, or Altocumulus having the appearance of cumuliform tufts
- 9 = Altocumulus of a chaotic sky, generally at several levels
- / = Types of medium cloud invisible owing to darkness, fog, blowing dust or sand or other similar phenomena, or more often because of the presence of a continuous layer of lower clouds.

**Ch :** Type of high cloud

0 = No high cloud

1 = Cirrus in the form of filaments, strands or hooks, not progressively invading the sky.

2 = Dense cirrus, in patches or entangled sheaves, which usually do not increase and sometimes seem to be the remains of the upper part of a Cumulonimbus; or Cirrus with sproutings in the form of small turrets or battlements, or Cirrus having the appearance of cumuliform tufts

3 = Dense Cirrus, often in the form of an anvil, being the remains of the upper part of Cumulonimbus, or where the rest of the Cumulonimbus is below the horizon

4 = Cirrus in the form of hooks or filaments, or both, progressively invading the sky; they generally become denser as a whole

5 = Cirrus (often in bands converging towards one or two opposite points on the horizon) and Cirrostratus, or Cirrostratus alone; in either case they are progressively invading the sky, and generally growing denser as a whole, but the continuous veil does not reach 45 degrees above the horizon.

6 = Cirrus (often in bands converging towards one or two opposite points on the horizon) and Cirrostratus, or Cirrostratus alone; in either case they are progressively invading the sky, and generally growing denser as a whole; the continuous veil extends more than 45 degrees above the horizon, without the sky being totally covered

7 = Veil of Cirrostratus covering the celestial dome.

8 = Cirrostratus not progressively invading the sky and not completely covering the celestial dome

9 = Cirrocumulus alone, or accompanied by Cirrus or Cirrostratus, or both, but Cirrocumulus is predominant.

/ = Types of high cloud invisible owing to darkness, fog, blowing dust or sand or other similar phenomena, or more often because of the presence of a continuous layer of lower clouds.

**8 Groups**

**N** = Amount of cloud reported by C, okta.

**C** = Type of cloud

0 = Cirrus (Ci)

1 = Cirrocumulus (Cc)

2 = Cirrostratus (Cs)

3 = Altocumulus (Ac)

4 = Altostratus (As)

5 = Nimbostratus (Ns)

6 = Stratocumulus (Sc)

7 = Stratus (St)

8 = Cumulus (Cu)

9 = Cumulonimbus (Cb)

/ = Cloud type not visible owing to darkness, fog, duststorm, or other analogous phenomena.

**hshs** = Height of cloud above station level reported by type C

00 to 50 = Height in hundreds of feet

51 to 55 Not used

56 to 80 = Subtract 50 to obtain cloud height in thousands of feet

81 to 88 = Height of cloud between 35000 and 70000 ft in 5000 ft steps.